



## Projects



**Language technology is the next frontier of AI:  
 Apply it to your business**



## About ixa ([ixa.eus](http://ixa.eus))

- IXA is a research group working on Natural Language Processing since 1988.
- It was created with the aim of developing basic computational resources for Basque.
- The group is composed of 38 computer scientists, 15 linguists and 3 research technicians (53 PhD).

## About Aholab ([aholab.ehu.eus](http://aholab.ehu.eus))

- Aholab Signal Processing Laboratory is a research group working on speech processing technologies.
- The team is formed by 11 professionals of telecommunication technologies engineering and the department of Communication Engineering.
- AhoLab is a reference group in the development of speech technologies for Basque with more than 20 years of experience.

## Postgraduate courses

- The IXA Group offers two masters: EM LCT & HAP/LAP. [ixa.eus/master](http://ixa.eus/master)
- Doctoral Programme in Language Analysis and Processing.  
[ehu.eus/en/web/doctoradohaplap](http://ehu.eus/en/web/doctoradohaplap)

## Products ([ixa.eus/produktuak](http://ixa.eus/produktuak) · [aholab.ehu.eus/aholab/products](http://aholab.ehu.eus/aholab/products))

### Text to speech conversion

Tool for voice signal creation from input text.

### Automatic speech recognition

Tool for the determination of the text pronounced in a voice signal.

### Speech technologies and functional diversity

Implementation of speech technologies for the improvement of the life quality of the orally disabled people.

### Information extraction from voice and audio

Acoustic event detection.

### Speech technologies for education

- Automatic systems for oral answer verification
- Automatic tools for pronunciation evaluation

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### Xuxen [xuxen.eus](http://xuxen.eus)

Basque spelling corrector

### ixa pipes (multilingual) [ixa2.si.ehu.eus/ixa-pipes](http://ixa2.si.ehu.eus/ixa-pipes)

Multilingual NLP tools

### ixaKat (eus) [ixa2.si.ehu.eus/ixakat](http://ixa2.si.ehu.eus/ixakat)

A modular chain of NLP Tools for Basque

- ixa-pipe-pos-eu**: morphological analyzer and a PoS tagger
- ixa-pipe-dep-eu**: a dependency parser

### Machine Translation

- matxin**: Machine translation from Spanish to Basque [matxin.sourceforge.net](http://matxin.sourceforge.net)
- EUSMT**: Statistical Machine Translation from Spanish to Basque  
[ixa.si.ehu.eus/openmt2](http://ixa.si.ehu.eus/openmt2)
- Neural Machine Translation**:
  - Supervised [ixa.eus/nmtdemo](http://ixa.eus/nmtdemo)
  - Unsupervised [github.com/artetxem](https://github.com/artetxem)
- Mitzuli**: The open translator app for Android [mitzuli.com](http://mitzuli.com)

### Medical domain

- FreelingMed + ADR detection**: Freeling adapted for medicine and adverse drug reaction detection [ixa2.si.ehu.eus/adr2openbrat](http://ixa2.si.ehu.eus/adr2openbrat)
- Medical Entity Recognizer (Perceptron)**  
[ixa2.si.ehu.eus/ixamed-pertzeptroia/NER\\_Pertzeptroia.zip](http://ixa2.si.ehu.eus/ixamed-pertzeptroia/NER_Pertzeptroia.zip)

### Resources (Text & Speech)

- DEP (Basque Dependency Treebank)** [ixa2.si.ehu.eus/epecdep](http://ixa2.si.ehu.eus/epecdep)  
A syntactic corpus tagged using the Dependency Grammar Theory
- e-ROLda** [ixa2.si.ehu.eus/e-rola](http://ixa2.si.ehu.eus/e-rola)  
A tool for looking up verb entries in the BVI lexicon and examples in EPEC-RolSem
- MCR** [ixa2.si.ehu.eus/mcr](http://ixa2.si.ehu.eus/mcr)  
Integrated Basque, Catalan, English, Galician, Spanish wordnets, semantic resources and ontologies
- Euskal RST Treebank** [ixa2.si.ehu.eus/diskurtsoa](http://ixa2.si.ehu.eus/diskurtsoa)  
Basque RST relation- and tree-bank
- AhoSpeaker, AHOCoder, EmoDB-Eu3**  
Generation of oral databases mainly for Basque